

REMARKS

Appended hereto is a replacement sheet of drawings. No amendments have been made. Further consideration of this application is requested for the following reasons.

With regard to the objection to the drawings, the appended replacement sheet of drawings places the drawings with handwritten reference numbers and labeling with formally numbered and lettered reference numbers and labeling, so that withdrawal of the objection to the drawings is in order and is requested.

Claims 1, 2, 5-8, and 11 have been rejected once more as being unpatentable under 35 USC § 103 based on the combined teachings of the Raiser and Jungreis patents. The Examiner's response to applicants' prior arguments has been noted, but the response fails to fully take into account all of the arguments presented, especially a key aspect of the prior art which would lead one of ordinary skill away from the present invention rather than render it obvious. Thus, reconsideration of this rejection is in order for the following reasons as is explained more fully below.

As recognized by the Examiner, Raiser discloses a DC/DC converter for a fuel cell in which two different voltages are provided by a DC/DC converter, and in contrast to the present invention, both provided voltages are converted voltages. Thus, the ability to provide a converted voltage is neither sought, nor disclosed by Raiser so that, like the prior art described in the specification, the complete electrical energy of the fuel cell stack is delivered to the converter which must be engineered for high power. Thus, the Examiner places reliance on the Jungreis patent's disclosure for a manner of deriving unconverted electrical energy.

However, the Jungreis patent, as explained in applicants' previous response, discloses a fuel cell power control in which an unconverted voltage is delivered *directly* to the load, by passing the DC/DC or other power converter as shown in Fig. 4 of the Jungreis patent and described relative to Fig. 4 in column 3, lines 43-51. This is in direct contrast to what is disclosed by the present applicants and is recited in independent claims 1 & 6 of the present patent application, i.e., the unconverted voltage is provided *via* the converter. Thus, if one of ordinary skill were to apply the teaching of Jungreis to provide a converted and an unconverted voltage to Raiser, the result would be a method and arrangement in which the unconverted voltage is delivered directly to the load from a point upstream of the DC/DC converter as shown and described by Jungreis. There would be no reason or motivation to provide the unconverted voltage via the DC/DC converter and the Examiner's statement that:

... to have the unconverted line pass through the converter module would have been obvious to one of ordinary skill in the art to in order *[sic]* supply a load with the power that has not been converted in order to reduce the complexity of the power conditions system thereby reducing the costs and increase the efficiency of the second output electric power. (page 3 of the Action, penultimate sentence)


However, this conclusion is contrary to Jungreis express teachings that his invention “operates directly as shown in Fig. 4 because doing so causes the efficiency of the auxiliary system to be increased “since there are no power electronics between the energy storage device and auxiliary load” and because “the circuit of FIG. 4 removes the necessity of ... coordinating any power conditioner with the fuel cell stack-instead, the dc-to-dc converter 12A” of FIG. 4 only needs to regulate the output voltage regardless of the fuel cell stack’s operation status. Therefore, on the one hand, Jungreis fails to provide the asserted motivation cited by the Examiner to justify rejected applicants’ claims, and on the other hand, Jungreis expressly teaches away from routing the unconverted power to the load via the DC/DC converter. Moreover, given the simplicity of Jungreis’ circuit, it is not seen how the Examiner could contend that departing from the express teachings of the Jungreis patent by taking the unconverted power from the DC/DC converter would achieve any reduction in complexity or costs or any increase in efficiency. It is only the present applicants that teach to provide a converted and an unconverted voltage via the DC/DC converter because, as noted in paragraph [0008], it “is possible to connect the fuel cell only to the DC/DC converter” so that “no additional circuitry measures are necessary in the area of the fuel cell.” Thus, the present invention obtains an improvement not taught or suggested by the prior art Raiser and Jungreis patents, and any proper application of Jungreis patent to Raiser would result in an arrangement in which an auxiliary power tap is provided upstream of Raiser’s DC/DC converter which would still have two power outputs for providing two different converted voltages. Therefore, the § 103 rejection based on these patents should be withdrawn.

Claims 3 & 9 have again been rejected as being unpatentable under 35 USC § 103 based on the combined teachings of the Raiser and Jungreis patents when viewed in further combination with the Chiao patent while claims 4 & 10 have again been rejected based on these references when viewed in still further combination with the Kuwayama et al. patent. However, as pointed out in applicants’ prior response, even if loads as taught by Chiao and the control of Kuwayama et al. were used with the Raiser DC/DC converter as modified based on Jungreis, the fact would remain that there still would be no teaching to provide the

unconverted voltage via the DC/DC converter instead of directly from the fuel cell at a point upstream of the DC/DC converter as taught by Jungreis, nor would there be any recognition of the advantage noted above as being obtained by the present invention. Accordingly, these rejections should also be withdrawn for the same reasons as noted above with respect to the combination of the Raiser and Jungreis patents by themselves.

While this application should now be in condition for allowance, in the event that any issues should remain after consideration of this response which could be addressed through discussions with the undersigned, then the Examiner is requested to contact the undersigned by telephone for that purpose.

Respectfully submitted,

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